



WALLACH21(INL2).ST25.txt  
SEQUENCE LISTING

<110> WALLACH, David  
MALININ, Nikolai  
BOLDIN, Mark  
KOVALENKO, Andrei  
METT, Igor

<120> MODULATORS OF TNF RECEPTOR ASSOCIATED FACTOR (TRAF), THEIR  
PREPARATION AND USE

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<151> 1997-04-01

<150> IL 117800  
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WALLACH21(INL2).ST25.txt

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<220>

WALLACH21(INL2).ST25.txt

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Ala Gln Val Glu Arg Tyr Val Pro Glu His Glu Arg Cys Cys Trp Cys  
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Leu Cys Cys Gly Cys Glu Val Arg Glu His Leu Ser His Gly Asn Leu  
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Thr Val Leu Tyr Gly Gly Leu Leu Glu His Leu Ala Ser Pro Glu His  
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Lys Lys Ala Thr Asn Lys Phe Trp Trp Glu Asn Lys Ala Glu Val Gln  
115 120 125

Met Lys Glu Lys Phe Leu Val Thr Pro Gln Asp Tyr Ala Arg Phe Lys  
130 135 140

Lys Ser Met Val Lys Gly Leu Asp Ser Tyr Glu Glu Lys Glu Asp Lys  
Page 14

145                      150                      155                      160  
 Val Ile Lys Glu Met Ala Ala Gln Ile Arg Glu Val Glu Gln Ser Arg  
                          165                                      170                                      175  
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 Glu Glu Gly Ser Ser Ala Pro Arg Ser Trp Lys Gly Met Asn Ser Gln  
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 Pro Glu Leu Asp Trp Met Glu Thr Gly Pro Ser Leu Thr Phe Ile Gly  
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 Gly Pro Ser Tyr Glu Glu Phe Leu Lys Glu Lys Glu Lys Gln Lys Leu  
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 Lys Lys Leu Pro Pro Asp Arg Val Gly Ala Asn Phe Asp His Ser Ser  
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    325                                      330                                      335  
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    340                                      345                                      350  
 Gln Leu Pro Xaa Gly Xaa Lys Pro Lys Ser Thr Lys Pro Leu Leu Tyr  
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Phe

## WALLACH21(INL2).ST25.txt

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## WALLACH21(INL2).ST25.txt

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Pro Val Phe Cys Gly Lys Trp Glu Ile Leu Asn Asp Val Ile Thr Lys  
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Gly Thr Ala Lys Glu Gly Ser Glu Ala Gly Pro Ala Ala Ile Ser Ile  
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Ile Ala Gln Ala Glu Cys Glu Asn Ser Gln Glu Phe Ser Pro Thr Phe  
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Ser Glu Arg Ile Phe Ile Ala Gly Ser Lys Gln Tyr Ser Gln Ser Glu  
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Ser Leu Asp Gln Ile Pro Asn Asn Val Ala His Ala Thr Glu Gly Lys  
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Met Ala Arg Val Cys Trp Lys Gly Lys Arg Arg Ser Lys Ala Arg Lys  
 Page 18

130

135

140

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Lys Leu His His Pro Gln Asp Gly Gly Pro Leu Pro Leu Pro Thr His  
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Thr His Gln Leu Arg Leu Gly Arg Gly Ser Phe Gly Glu Val His Arg

405

410

415

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Cys His Pro Trp Thr Gln Phe Phe Arg Gly Pro Leu Cys Leu Lys Ile  
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Ala Ser Glu Pro Pro Pro Val Arg Glu Ile Pro Pro Ser Cys Ala Pro  
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Gln Val Gly Gly Leu Lys Ser Pro Trp Arg Gly Glu Tyr Lys Glu Pro  
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Arg His Pro Pro Pro Asn Gln Ala Asn Tyr His Gln Thr Leu His Ala

675

680

685

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Pro Pro Glu Pro Asn Lys Ser Pro Pro Leu Thr Leu Ser Lys Glu Glu  
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Ser Gly Met Trp Glu Pro Leu Pro Leu Ser Ser Leu Glu Pro Ala Pro  
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Glu Leu Gln Gln Leu Glu Ile Glu Leu Phe Leu Asn Ser Leu Ser Gln  
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Ala Ala Phe Ser Leu Val Thr Lys Asp Gly Gln Pro Val Arg Tyr Asp  
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Met Glu Val Pro Asp Ser Gly Ile Asp Leu Gln Cys Thr Leu Ala Pro  
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Asn Arg Pro

945

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WALLACH21(INL2).ST25.txt

Met Cys Pro Asp Ser Asn Gln Asn Lys Glu His Ser Glu Ser Leu Leu  
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Arg Ser Gly Gln Glu Val Pro Trp Leu Ser Ser Val Arg Tyr Gly Thr  
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Val Glu Asp Leu Leu Ala Phe Ala Asn His Ile Ser Asn Thr Thr Lys  
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His Phe Tyr Arg Cys Arg Pro Gln Glu Ser Gly Ile Leu Leu Asn Met  
100 105 110

Val Ile Ser Pro Gln Asn Gly Arg Tyr Gln Ile Asp Ser Asp Val Leu  
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Leu Val Pro Trp Lys Leu Thr Tyr Arg Ser Ile Gly Ser Gly Phe Val  
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Pro Arg Gly Ala Phe Gly Lys Val Tyr Leu Ala Gln Asp Met Lys Thr  
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Lys Lys Arg Met Ala Cys Lys Leu Ile Pro Val Asp Gln Phe Lys Pro  
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Ser Asp Val Glu Ile Gln Ala Cys Phe Arg His Glu Asn Ile Ala Glu  
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Leu Tyr Gly Ala Val Leu Trp Gly Asp Thr Val His Leu Phe Met Glu  
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Ala Gly Glu Gly Gly Ser Val Leu Glu Lys Leu Glu Ser Cys Gly Pro  
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Met Arg Glu Phe Glu Ile Ile Trp Val Thr Lys His Val Leu Lys Gly  
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Leu Asp Phe Leu His Ser Lys Lys Val Ile His His Asp Ile Lys Pro  
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Ser Asn Ile Val Phe Met Ser Thr Lys Ala Val Leu Val Asp Phe Gly  
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Ser Thr Lys Ala Asp Ile Tyr Ser Leu Gly Ala Thr Leu Ile His Met  
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WALLACH21(INL2).ST25.txt

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Ile Ala Gly Asp Cys Ser Pro Gly Met Arg Glu Leu Ile Glu Ala Ala  
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370 375 380

His Glu Ala Leu Asn Pro Pro Arg Glu Asp Gln Pro Arg Cys Gln Ser  
385 390 395 400

Leu Asp Ser Ala Leu Phe Asp Arg Lys Arg Leu Leu Ser Arg Lys Glu  
405 410 415

Leu Glu Leu Pro Glu Asn Ile Ala Asp Ser Ser Cys Thr Gly Ser Thr  
420 425 430

Glu Glu Ser Glu Val Leu Arg Arg Gln Arg Ser Leu Tyr Ile Asp Leu  
435 440 445

Gly Ala Leu Ala Gly Tyr Phe Asn Ile Val Arg Gly Pro Pro Thr Leu  
450 455 460

Glu Tyr Gly  
465

<210> 13  
<211> 467  
<212> PRT  
<213> Homo sapiens

<400> 13

Met Glu Tyr Met Ser Thr Gly Ser Asp Asn Lys Glu Glu Ile Asp Leu  
1 5 10 15

Leu Ile Lys His Leu Asn Val Ser Asp Val Ile Asp Ile Met Glu Asn  
20 25 30

Leu Tyr Ala Ser Glu Glu Pro Ala Val Tyr Glu Pro Ser Leu Met Thr  
35 40 45

Met Cys Gln Asp Ser Asn Gln Asn Asp Glu Arg Ser Lys Ser Leu Leu  
50 55 60

Leu Ser Gly Gln Glu Val Pro Trp Leu Ser Ser Val Arg Tyr Gly Thr  
65 70 75 80



## WALLACH21(INL2).ST25.txt

Val Glu Asp Leu Leu Ala Phe Ala Asn His Ile Ser Asn Thr Ala Lys  
                   85                                  90                                  95  
 His Phe Tyr Gly Gln Arg Pro Gln Glu Ser Gly Ile Leu Leu Asn Met  
                   100                                  105                                  110  
 Val Ile Thr Pro Gln Asn Gly Arg Tyr Gln Ile Asp Ser Asp Val Leu  
                   115                                  120                                  125  
 Leu Ile Pro Trp Lys Leu Thr Tyr Arg Asn Ile Gly Ser Asp Phe Ile  
                   130                                  135                                  140  
 Pro Arg Gly Ala Phe Gly Lys Val Tyr Leu Ala Gln Asp Ile Lys Thr  
                   145                                  150                                  155                                  160  
 Lys Lys Arg Met Ala Cys Lys Leu Ile Pro Val Asp Gln Phe Lys Pro  
                   165                                  170                                  175  
 Ser Asp Val Glu Ile Gln Ala Cys Phe Arg His Glu Asn Ile Ala Glu  
                   180                                  185                                  190  
 Leu Tyr Gly Ala Val Leu Trp Gly Glu Thr Val His Leu Phe Met Glu  
                   195                                  200                                  205  
 Ala Gly Glu Gly Gly Ser Val Leu Glu Lys Leu Glu Ser Cys Gly Pro  
                   210                                  215                                  220  
 Met Arg Glu Phe Glu Ile Ile Trp Val Thr Lys His Val Leu Lys Gly  
                   225                                  230                                  235                                  240  
 Leu Asp Phe Leu His Ser Lys Lys Val Ile His His Asp Ile Lys Pro  
                   245                                  250                                  255  
 Ser Asn Ile Val Phe Met Ser Thr Lys Ala Val Leu Val Asp Phe Gly  
                   260                                  265                                  270  
 Leu Ser Val Gln Met Thr Glu Asp Val Tyr Pro Phe Lys Asp Leu Arg  
                   275                                  280                                  285  
 Gly Thr Glu Ile Tyr Met Ser Pro Glu Val Ile Leu Cys Arg Gly His  
                   290                                  295                                  300  
 Ser Thr Lys Ala Asp Ile Tyr Ser Leu Gly Ala Thr Leu Ile His Met  
                   305                                  310                                  315                                  320  
 Gln Thr Gly Thr Pro Pro Trp Val Lys Arg Tyr Pro Arg Ser Ala Tyr  
                   325                                  330                                  335  
 Pro Ser Tyr Leu Tyr Ile Ile His Lys Gln Ala Pro Pro Leu Glu Asp  
                   340                                  345                                  350

WALLACH21(INL2).ST25.txt

Ile Ala Asp Asp Cys Ser Pro Gly Met Arg Glu Leu Ile Glu Ala Ser  
355 360 365

Leu Glu Arg Asn Pro Asn His Arg Pro Arg Ala Ala Asp Leu Leu Lys  
370 375 380

His Glu Ala Leu Asn Pro Pro Arg Glu Asp Gln Pro Arg Cys Gln Ser  
385 390 395 400

Leu Asp Ser Ala Leu Leu Glu Arg Lys Arg Leu Leu Ser Arg Lys Glu  
405 410 415

Leu Glu Leu Pro Glu Asn Ile Ala Asp Ser Ser Cys Thr Gly Ser Thr  
420 425 430

Glu Glu Ser Glu Met Leu Lys Arg Gln Arg Ser Leu Tyr Ile Asp Leu  
435 440 445

Gly Ala Leu Ala Gly Tyr Phe Asn Leu Val Arg Gly Pro Pro Thr Leu  
450 455 460

Glu Tyr Gly  
465

<210> 14  
<211> 947  
<212> PRT  
<213> Homo sapiens

<400> 14

Met Ala Val Met Glu Met Ala Cys Pro Gly Ala Pro Gly Ser Ala Val  
1 5 10 15

Gly Gln Gln Lys Glu Leu Pro Lys Pro Lys Glu Lys Thr Pro Pro Leu  
20 25 30

Gly Lys Lys Gln Ser Ser Val Tyr Lys Leu Glu Ala Val Glu Lys Ser  
35 40 45

Pro Val Phe Cys Gly Lys Trp Glu Ile Leu Asn Asp Val Ile Thr Lys  
50 55 60

Gly Thr Ala Lys Glu Gly Ser Glu Ala Gly Pro Ala Ala Ile Ser Ile  
65 70 75 80

Ile Ala Gln Ala Glu Cys Glu Asn Ser Gln Glu Phe Ser Pro Thr Phe  
85 90 95

Ser Glu Arg Ile Phe Ile Ala Gly Ser Lys Gln Tyr Ser Gln Ser Glu  
100 105 110

## WALLACH21(INL2).ST25.txt

Ser Leu Asp Gln Ile Pro Asn Asn Val Ala His Ala Thr Glu Gly Lys  
 115 120 125  
 Met Ala Arg Val Cys Trp Lys Gly Lys Arg Arg Ser Lys Ala Arg Lys  
 130 135 140  
 Lys Arg Lys Lys Lys Ser Ser Lys Ser Leu Ala His Ala Gly Val Ala  
 145 150 155 160  
 Leu Ala Lys Pro Leu Pro Arg Thr Pro Glu Gln Glu Ser Cys Thr Ile  
 165 170 175  
 Pro Val Gln Glu Asp Glu Ser Pro Leu Gly Ala Pro Tyr Val Arg Asn  
 180 185 190  
 Thr Pro Gln Phe Thr Lys Pro Leu Lys Glu Pro Gly Leu Gly Gln Leu  
 195 200 205  
 Cys Phe Lys Gln Leu Gly Glu Gly Leu Arg Pro Ala Leu Pro Arg Ser  
 210 215 220  
 Glu Leu His Lys Leu Ile Ser Pro Leu Gln Cys Leu Asn His Val Trp  
 225 230 235 240  
 Lys Leu His His Pro Gln Asp Gly Gly Pro Leu Pro Leu Pro Thr His  
 245 250 255  
 Pro Phe Pro Tyr Ser Arg Leu Pro His Pro Phe Pro Phe His Pro Leu  
 260 265 270  
 Gln Pro Trp Lys Pro His Pro Leu Glu Ser Phe Leu Gly Lys Leu Ala  
 275 280 285  
 Cys Val Asp Ser Gln Lys Pro Leu Pro Asp Pro His Leu Ser Lys Leu  
 290 295 300  
 Ala Cys Val Asp Ser Pro Lys Pro Leu Pro Gly Pro His Leu Glu Pro  
 305 310 315 320  
 Ser Cys Leu Ser Arg Gly Ala His Glu Lys Phe Ser Val Glu Glu Tyr  
 325 330 335  
 Leu Val His Ala Leu Gln Gly Ser Val Ser Ser Ser Gln Ala His Ser  
 340 345 350  
 Leu Thr Ser Leu Ala Lys Thr Trp Ala Ala Arg Gly Ser Arg Ser Arg  
 355 360 365  
 Glu Pro Ser Pro Lys Thr Glu Asp Asn Glu Gly Val Leu Leu Thr Glu  
 370 375 380

## WALLACH21(INL2).ST25.txt

Lys Leu Lys Pro Val Asp Tyr Glu Tyr Arg Glu Glu Val His Trp Ala  
385 390 395 400

Thr His Gln Leu Arg Leu Gly Arg Gly Ser Phe Gly Glu Val His Arg  
405 410 415

Met Glu Asp Lys Gln Thr Gly Phe Gln Cys Ala Val Lys Lys Val Arg  
420 425 430

Leu Glu Val Phe Arg Ala Glu Glu Leu Met Ala Cys Ala Gly Leu Thr  
435 440 445

Ser Pro Arg Ile Val Pro Leu Tyr Gly Ala Val Arg Glu Gly Pro Trp  
450 455 460

Val Asn Ile Phe Met Glu Leu Leu Glu Gly Gly Ser Leu Gly Gln Leu  
465 470 475 480

Val Lys Glu Gln Gly Cys Leu Pro Glu Asp Arg Ala Leu Tyr Tyr Leu  
485 490 495

Gly Gln Ala Leu Glu Gly Leu Glu Tyr Leu His Ser Arg Arg Ile Leu  
500 505 510

His Gly Asp Val Lys Ala Asp Asn Val Leu Leu Ser Ser Asp Gly Ser  
515 520 525

His Ala Ala Leu Cys Asp Phe Gly His Ala Val Cys Leu Gln Pro Asp  
530 535 540

Gly Leu Gly Lys Ser Leu Leu Thr Gly Asp Tyr Ile Pro Gly Thr Glu  
545 550 555 560

Thr His Met Ala Pro Glu Val Val Leu Gly Arg Ser Cys Asp Ala Lys  
565 570 575

Val Asp Val Trp Ser Ser Cys Cys Met Met Leu His Met Leu Asn Gly  
580 585 590

Cys His Pro Trp Thr Gln Phe Phe Arg Gly Pro Leu Cys Leu Lys Ile  
595 600 605

Ala Ser Glu Pro Pro Pro Val Arg Glu Ile Pro Pro Ser Cys Ala Pro  
610 615 620

Leu Thr Ala Gln Ala Ile Gln Glu Gly Leu Arg Lys Glu Pro Ile His  
625 630 635 640

Arg Val Ser Ala Ala Glu Leu Gly Gly Lys Val Asn Arg Ala Leu Gln  
645 650 655

## WALLACH21(INL2).ST25.txt

Gln Val Gly Gly Leu Lys Ser Pro Trp Arg Gly Glu Tyr Lys Glu Pro  
 660 665 670  
 Arg His Pro Pro Pro Asn Gln Ala Asn Tyr His Gln Thr Leu His Ala  
 675 680 685  
 Gln Pro Arg Glu Leu Ser Pro Arg Ala Pro Gly Pro Arg Pro Ala Glu  
 690 695 700  
 Glu Thr Thr Gly Arg Ala Pro Lys Leu Gln Pro Pro Leu Pro Pro Glu  
 705 710 715 720  
 Pro Pro Glu Pro Asn Lys Ser Pro Pro Leu Thr Leu Ser Lys Glu Glu  
 725 730 735  
 Ser Gly Met Trp Glu Pro Leu Pro Leu Ser Ser Leu Glu Pro Ala Pro  
 740 745 750  
 Ala Arg Asn Pro Ser Ser Pro Glu Arg Lys Ala Thr Val Pro Glu Gln  
 755 760 765  
 Glu Leu Gln Gln Leu Glu Ile Glu Leu Phe Leu Asn Ser Leu Ser Gln  
 770 775 780  
 Pro Phe Ser Leu Glu Glu Gln Glu Gln Ile Leu Ser Cys Leu Ser Ile  
 785 790 795 800  
 Asp Ser Leu Ser Leu Ser Asp Asp Ser Glu Lys Asn Pro Ser Lys Ala  
 805 810 815  
 Ser Gln Ser Ser Arg Asp Thr Leu Ser Ser Gly Val His Ser Trp Ser  
 820 825 830  
 Ser Gln Ala Glu Ala Arg Ser Ser Ser Trp Asn Met Val Leu Ala Arg  
 835 840 845  
 Gly Arg Pro Thr Asp Thr Pro Ser Tyr Phe Asn Gly Val Lys Val Gln  
 850 855 860  
 Ile Gln Ser Leu Asn Gly Glu His Leu His Ile Arg Glu Phe His Arg  
 865 870 875 880  
 Val Lys Val Gly Asp Ile Ala Thr Gly Ile Ser Ser Gln Ile Pro Ala  
 885 890 895  
 Ala Ala Phe Ser Leu Val Thr Lys Asp Gly Gln Pro Val Arg Tyr Asp  
 900 905 910  
 Met Glu Val Pro Asp Ser Gly Ile Asp Leu Gln Cys Thr Leu Ala Pro  
 915 920 925

## WALLACH21(INL2).ST25.txt

Asp Gly Ser Phe Ala Trp Ser Trp Arg Val Lys His Gly Gln Leu Glu  
 930 935 940

Asn Arg Pro  
 945

<210> 15  
 <211> 688  
 <212> PRT  
 <213> Homo sapiens

<400> 15

Thr Leu Thr His Thr Thr Ser Leu Phe Ala Pro Pro Asn Leu Ser Pro  
 1 5 10 15

Met Gln Asp Phe Ile Gly Ser Val Arg Arg Ser Leu Val Phe Lys Gln  
 20 25 30

Ser Gly Asp Phe Asp Thr Gly Ala Ala Gly Val Gly Ser Gly Phe Gly  
 35 40 45

Gly Phe Val Glu Lys Leu Gly Ser Ser Ile Arg Lys Ser Ser Ile Gly  
 50 55 60

Ile Phe Ser Lys Ala His Val Pro Ala Leu Pro Ser Ile Ser Lys Ala  
 65 70 75 80

Glu Leu Pro Ala Lys Ala Arg Lys Asp Asp Thr Pro Pro Ile Arg Trp  
 85 90 95

Arg Lys Gly Glu Met Ile Gly Cys Gly Ala Phe Gly Arg Val Tyr Met  
 100 105 110

Gly Met Asn Val Asp Ser Gly Glu Leu Leu Ala Ile Lys Glu Val Ser  
 115 120 125

Ile Ala Met Asn Gly Ala Ser Arg Glu Arg Ala Gln Ala His Val Arg  
 130 135 140

Glu Leu Glu Glu Glu Val Asn Leu Leu Lys Asn Leu Ser His Pro Asn  
 145 150 155 160

Ile Val Arg Tyr Leu Gly Thr Ala Arg Glu Ala Gly Ser Leu Asn Ile  
 165 170 175

Leu Leu Glu Phe Val Pro Gly Gly Ser Ile Ser Ser Leu Leu Gly Lys  
 180 185 190

Phe Gly Ser Phe Pro Glu Ser Val Ile Arg Met Tyr Thr Lys Gln Leu  
 195 200 205

Leu Leu Gly Leu Glu Tyr Leu His Lys Asn Gly Ile Met His Arg Asp  
 Page 30

210

215

220

Ile Lys Gly Ala Asn Ile Leu Val Asp Asn Lys Gly Cys Ile Lys Leu  
 225 230 235 240

Ala Asp Phe Gly Ala Ser Lys Lys Val Val Glu Leu Ala Thr Met Thr  
 245 250 255

Gly Ala Lys Ser Met Lys Gly Thr Pro Tyr Trp Met Ala Pro Glu Val  
 260 265 270

Ile Leu Gln Thr Gly His Ser Phe Ser Ala Asp Ile Trp Ser Val Gly  
 275 280 285

Cys Thr Ile Ile Glu Met Ala Thr Gly Lys Pro Pro Trp Ser Gln Gln  
 290 295 300

Tyr Gln Glu Val Ala Ala Leu Phe His Ile Gly Thr Thr Lys Ser His  
 305 310 315 320

Pro Pro Ile Pro Glu His Leu Ser Ala Glu Ser Lys Asp Phe Leu Leu  
 325 330 335

Lys Cys Leu Gln Lys Glu Pro His Leu Arg His Ser Ala Ser Asn Leu  
 340 345 350

Leu Gln His Pro Phe Val Thr Ala Glu His Gln Glu Ala Arg Pro Phe  
 355 360 365

Leu Arg Ser Ser Phe Met Gly Asn Pro Glu Asn Met Ala Ala Gln Arg  
 370 375 380

Met Asp Val Arg Thr Ser Ile Ile Pro Asp Met Arg Ala Ser Cys Asn  
 385 390 395 400

Gly Leu Lys Asp Val Cys Gly Val Ser Ala Val Arg Cys Ser Thr Val  
 405 410 415

Tyr Pro Glu Asn Ser Leu Gly Lys Glu Ser Leu Trp Lys Leu Gly Asn  
 420 425 430

Ser Asp Asp Asp Met Cys Gln Met Asp Asn Asp Asp Phe Met Phe Gly  
 435 440 445

Ala Ser Val Lys Cys Ser Ser Asp Leu His Ser Pro Ala Asn Tyr Lys  
 450 455 460

Ser Phe Asn Pro Met Cys Glu Pro Asp Asn Asp Trp Pro Cys Lys Phe  
 465 470 475 480

Asp Glu Ser Pro Glu Leu Thr Lys Ser Gln Ala Asn Leu His Tyr Asp  
 Page 31

485

490

495

Gln Ala Thr Ile Lys Pro Thr Asn Asn Pro Ile Met Ser Tyr Lys Glu  
500 505 510

Asp Leu Ala Phe Thr Phe Pro Ser Gly Gln Ser Ala Ala Glu Asp Asp  
515 520 525

Asp Glu Leu Thr Glu Ser Lys Ile Arg Ala Phe Leu Asp Glu Lys Ala  
530 535 540

Met Asp Leu Lys Lys Leu Gln Thr Pro Leu Tyr Glu Gly Phe Tyr Asn  
545 550 555 560

Ser Leu Asn Val Ser Ser Thr Pro Ser Pro Val Gly Thr Gly Asn Lys  
565 570 575

Glu Asn Val Pro Ser Asn Ile Asn Leu Pro Pro Lys Ser Arg Ser Pro  
580 585 590

Lys Arg Met Leu Ser Arg Arg Leu Ser Thr Ala Ile Glu Gly Ala Cys  
595 600 605

Ala Pro Ser Pro Val Thr His Ser Lys Arg Ile Ser Asn Ile Gly Gly  
610 615 620

Leu Asn Gly Glu Ala Ile Gln Glu Ala Gln Leu Pro Arg His Asn Glu  
625 630 635 640

Trp Lys Asp Leu Leu Gly Ser Gln Arg Glu Ala Val Asn Ser Ser Phe  
645 650 655

Ser Glu Arg Gln Arg Arg Trp Lys Glu Glu Leu Asp Glu Glu Leu Gln  
660 665 670

Arg Lys Arg Glu Ile Met Arg Gln Ala Val Asn Leu Ser Pro Pro Lys  
675 680 685

<210> 16  
<211> 659  
<212> PRT  
<213> Homo sapiens

<400> 16

Met Glu Tyr Tyr Thr Ser Lys Glu Val Ala Glu Trp Leu Lys Ser Ile  
1 5 10 15

Gly Leu Glu Lys Tyr Ile Glu Gln Phe Ser Gln Asn Asn Ile Glu Gly  
20 25 30

Arg His Leu Asn His Leu Thr Leu Pro Leu Leu Lys Asp Leu Gly Ile  
35 40 45



## WALLACH21(INL2).ST25.txt

Glu Asn Thr Ala Lys Gly Lys Gln Phe Leu Lys Gln Arg Asp Tyr Leu  
 50 55 60  
 Arg Glu Phe Pro Arg Pro Cys Ile Leu Arg Phe Ile Ala Cys Asn Gly  
 65 70 75 80  
 Gln Thr Arg Ala Val Gln Ser Arg Gly Asp Tyr Gln Lys Thr Leu Ala  
 85 90 95  
 Ile Ala Leu Lys Lys Phe Ser Leu Glu Asp Ala Ser Lys Phe Ile Val  
 100 105 110  
 Cys Val Ser Gln Ser Ser Arg Ile Lys Leu Ile Thr Glu Glu Glu Phe  
 115 120 125  
 Lys Gln Ile Cys Phe Asn Ser Ser Ser Pro Glu Arg Asp Arg Leu Ile  
 130 135 140  
 Ile Val Pro Lys Glu Lys Pro Cys Pro Ser Phe Glu Asp Leu Arg Arg  
 145 150 155 160  
 Ser Trp Glu Ile Glu Leu Ala Gln Pro Ala Ala Leu Ser Ser Gln Ser  
 165 170 175  
 Ser Leu Ser Pro Lys Leu Ser Ser Val Leu Pro Thr Ser Thr Gln Lys  
 180 185 190  
 Arg Ser Val Arg Ser Asn Asn Ala Lys Pro Phe Glu Ser Tyr Gln Arg  
 195 200 205  
 Pro Pro Ser Glu Leu Ile Asn Ser Arg Ile Ser Asp Phe Phe Pro Asp  
 210 215 220  
 His Gln Pro Lys Leu Leu Glu Lys Thr Ile Ser Asn Ser Leu Arg Arg  
 225 230 235 240  
 Asn Leu Ser Ile Arg Thr Ser Gln Gly His Asn Leu Gly Asn Phe Gly  
 245 250 255  
 Gln Glu Ile Leu Pro Arg Ser Ser Arg Arg Ala Arg Pro Ser Glu Leu  
 260 265 270  
 Val Cys Pro Leu Ser Ser Leu Arg Ile Ser Val Ala Glu Asp Val Asn  
 275 280 285  
 Arg Leu Pro Arg Ile Asp Arg Gly Phe Asp Pro Pro Leu Thr Val Ser  
 290 295 300  
 Ser Thr Gln Arg Ile Ser Arg Pro Pro Ser Leu Gln Lys Ser Ile Thr  
 305 310 315 320

WALLACH21(INL2).ST25.txt

Met Val Gly Val Glu Pro Leu Tyr Gln Ser Asn Gly Asn Glu Lys Ser  
325 330 335

Ser Lys Tyr Asn Val Phe Ser Glu Ser Ala His Gly Asn His Gln Val  
340 345 350

Leu Ser Phe Ser Pro Gly Ser Ser Pro Ser Phe Ile Glu Gln Pro Ser  
355 360 365

Pro Ile Ser Pro Thr Ser Thr Thr Ser Glu Asp Thr Asn Thr Leu Glu  
370 375 380

Glu Asp Thr Asp Asp Gln Ser Ile Lys Trp Ile Arg Gly Ala Leu Ile  
385 390 395 400

Gly Ser Gly Ser Phe Gly Gln Val Tyr Leu Gly Met Asn Ala Ser Ser  
405 410 415

Gly Glu Leu Met Ala Val Lys Gln Val Ile Leu Asp Ser Val Ser Glu  
420 425 430

Ser Lys Asp Arg His Ala Lys Leu Leu Asp Ala Leu Ala Gly Glu Ile  
435 440 445

Ala Leu Leu Gln Glu Leu Ser His Glu His Ile Val Gln Tyr Leu Gly  
450 455 460

Ser Asn Leu Asn Ser Asp His Leu Asn Ile Phe Leu Glu Tyr Val Pro  
465 470 475 480

Gly Gly Ser Val Ala Gly Leu Leu Thr Met Tyr Gly Ser Phe Glu Glu  
485 490 495

Thr Leu Val Lys Asn Phe Ile Lys Gln Thr Leu Lys Gly Leu Glu Tyr  
500 505 510

Leu His Ser Arg Gly Ile Val His Arg Asp Ile Lys Gly Ala Asn Ile  
515 520 525

Leu Val Asp Asn Lys Gly Lys Ile Lys Ile Ser Asp Phe Gly Ile Ser  
530 535 540

Lys Lys Leu Glu Leu Asn Ser Thr Ser Thr Lys Thr Gly Gly Ala Arg  
545 550 555 560

Pro Ser Phe Gln Gly Ser Ser Phe Trp Met Ala Pro Glu Val Val Lys  
565 570 575

Gln Thr Met His Thr Glu Lys Thr Asp Ile Trp Ser Leu Gly Cys Leu  
580 585 590

WALLACH21(INL2).ST25.txt

Val Ile Glu Met Leu Thr Ser Lys His Pro Tyr Pro Asn Cys Asp Gln  
595 600 605

Met Gln Ala Ile Phe Arg Ile Gly Glu Asn Ile Leu Pro Glu Phe Pro  
610 615 620

Ser Asn Ile Ser Ser Ser Ala Ile Asp Phe Leu Glu Lys Thr Phe Ala  
625 630 635 640

Ile Asp Cys Asn Leu Arg Pro Thr Ala Ser Glu Leu Leu Ser His Pro  
645 650 655

Phe Val Ser

<210> 17  
<211> 717  
<212> PRT  
<213> Homo sapiens

<400> 17

Met Glu Gln Thr Gln Thr Ala Glu Gly Thr Asp Leu Leu Ile Gly Asp  
1 5 10 15

Glu Lys Thr Asn Asp Leu Pro Phe Val Gln Leu Phe Leu Glu Glu Ile  
20 25 30

Gly Cys Thr Gln Tyr Leu Asp Ser Phe Ile Gln Cys Asn Leu Val Thr  
35 40 45

Glu Glu Glu Ile Lys Tyr Leu Asp Lys Asp Ile Leu Ile Ala Leu Gly  
50 55 60

Val Asn Lys Ile Gly Asp Arg Leu Lys Ile Leu Arg Lys Ser Lys Ser  
65 70 75 80

Phe Gln Arg Asp Lys Arg Ile Glu Gln Val Asn Arg Leu Lys Asn Leu  
85 90 95

Met Glu Lys Val Ser Ser Leu Ser Thr Ala Thr Leu Ser Met Asn Ser  
100 105 110

Glu Leu Ile Pro Glu Lys His Cys Val Ile Phe Ile Leu Asn Asp Gly  
115 120 125

Ser Ala Lys Lys Val Asn Val Asn Gly Cys Phe Asn Ala Asp Ser Ile  
130 135 140

Lys Lys Arg Leu Ile Arg Arg Leu Pro His Glu Leu Leu Ala Thr Asn  
145 150 155 160

## WALLACH21(INL2).ST25.txt

Ser Asn Gly Glu Val Thr Lys Met Val Gln Asp Tyr Asp Val Phe Val  
 165 170 175  
 Leu Asp Tyr Thr Lys Asn Val Leu His Leu Leu Tyr Asp Val Glu Leu  
 180 185 190  
 Val Thr Ile Cys His Ala Asn Asp Arg Val Glu Lys Asn Arg Leu Ile  
 195 200 205  
 Phe Val Ser Lys Asp Gln Thr Pro Ser Asp Lys Ala Ile Ser Thr Ser  
 210 215 220  
 Lys Lys Leu Tyr Leu Arg Thr Leu Ser Ala Leu Ser Gln Val Gly Pro  
 225 230 235 240  
 Ser Ser Ser Asn Leu Leu Ala Gln Asn Lys Gly Ile Ser His Asn Asn  
 245 250 255  
 Ala Glu Gly Lys Leu Arg Ile Asp Asn Thr Glu Lys Asp Arg Ile Arg  
 260 265 270  
 Gln Ile Phe Asn Gln Arg Pro Pro Ser Glu Phe Ile Ser Thr Asn Leu  
 275 280 285  
 Ala Gly Tyr Phe Pro His Thr Asp Met Lys Arg Leu Gln Lys Thr Met  
 290 295 300  
 Arg Glu Ser Phe Arg His Ser Ala Arg Leu Ser Ile Ala Gln Arg Arg  
 305 310 315 320  
 Pro Leu Ser Ala Glu Ser Asn Asn Ile Gly Asp Ile Leu Leu Lys His  
 325 330 335  
 Ser Asn Ala Val Asp Met Ala Leu Leu Gln Gly Leu Asp Gln Thr Arg  
 340 345 350  
 Leu Ser Ser Lys Leu Asp Thr Thr Lys Ile Pro Lys Leu Ala His Lys  
 355 360 365  
 Arg Pro Glu Asp Asn Asp Ala Ile Ser Asn Gln Leu Glu Leu Leu Ser  
 370 375 380  
 Val Glu Ser Gly Glu Glu Glu Asp His Asp Phe Phe Gly Glu Asp Ser  
 385 390 395 400  
 Asp Ile Val Ser Leu Pro Thr Lys Ile Ala Thr Pro Lys Asn Trp Leu  
 405 410 415  
 Lys Gly Ala Cys Ile Gly Ser Gly Ser Phe Gly Ser Val Tyr Leu Gly  
 420 425 430

## WALLACH21(INL2).ST25.txt

Met Asn Ala His Thr Gly Glu Leu Met Ala Val Lys Gln Val Glu Ile  
 435 440 445  
 Lys Asn Asn Asn Ile Gly Val Pro Thr Asp Asn Asn Lys Gln Ala Asn  
 450 455 460  
 Ser Asp Glu Asn Asn Glu Gln Glu Glu Gln Glu Lys Ile Glu Asp  
 465 470 475 480  
 Val Gly Ala Val Ser His Pro Lys Thr Asn Gln Asn Ile His Arg Lys  
 485 490 495  
 Met Val Asp Ala Leu Gln His Glu Met Asn Leu Leu Lys Glu Leu His  
 500 505 510  
 His Glu Asn Ile Val Thr Tyr Tyr Gly Ala Ser Gln Glu Gly Gly Asn  
 515 520 525  
 Leu Asn Ile Phe Leu Glu Tyr Val Pro Gly Gly Ser Val Ser Ser Met  
 530 535 540  
 Leu Asn Asn Tyr Gly Pro Phe Glu Glu Ser Leu Ile Thr Asn Phe Thr  
 545 550 555 560  
 Arg Gln Ile Leu Ile Gly Val Ala Tyr Leu His Lys Lys Asn Ile Ile  
 565 570 575  
 His Arg Asp Ile Lys Gly Ala Asn Ile Leu Ile Asp Ile Lys Gly Cys  
 580 585 590  
 Val Lys Ile Thr Asp Phe Gly Ile Ser Lys Lys Leu Ser Pro Leu Asn  
 595 600 605  
 Lys Lys Gln Asn Lys Arg Ala Ser Leu Gln Gly Ser Val Phe Trp Met  
 610 615 620  
 Ser Pro Glu Val Val Lys Gln Thr Ala Thr Thr Ala Lys Ala Asp Ile  
 625 630 635 640  
 Trp Ser Thr Gly Cys Val Val Ile Glu Met Phe Thr Gly Lys His Pro  
 645 650 655  
 Phe Pro Asp Phe Ser Gln Met Gln Ala Ile Phe Lys Ile Gly Thr Asn  
 660 665 670  
 Thr Thr Pro Glu Ile Pro Ser Trp Ala Thr Ser Glu Gly Lys Asn Phe  
 675 680 685  
 Leu Arg Lys Ala Phe Glu Leu Asp Tyr Gln Tyr Arg Pro Ser Ala Leu  
 690 695 700

WALLACH21(INL2).ST25.txt

Glu Leu Leu Gln His Pro Trp Leu Asp Ala His Ile Ile  
705 710 715

<210> 18  
<211> 1478  
<212> PRT  
<213> Homo sapiens

<400> 18

Met Pro Phe Leu Arg Lys Ile Ala Gly Thr Ala His Thr His Ser Arg  
1 5 10 15

Ser Asp Ser Asn Ser Ser Val Lys Phe Gly His Gln Pro Thr Ser Ser  
20 25 30

Val Ala Ser Thr Lys Ser Ser Ser Lys Ser Pro Arg Ala Thr Ser Arg  
35 40 45

Lys Ser Ile Tyr Asp Asp Ile Arg Ser Gln Phe Pro Asn Leu Thr Pro  
50 55 60

Asn Ser Thr Ser Ser Gln Phe Tyr Glu Ser Thr Pro Val Ile Glu Gln  
65 70 75 80

Ser Phe Asn Trp Thr Thr Asp Asp His Ile Ser Ala Gly Thr Leu Glu  
85 90 95

Asn Pro Thr Ser Glu Thr Asn Ser Ser Tyr Lys Asn Asp Asn Gly Pro  
100 105 110

Ser Ser Leu Ser Asp Ser Arg Lys Ser Ser Gly Gly Asn Ser Val Asn  
115 120 125

Ser Leu Ser Phe Asp Lys Leu Ile Leu Ser Trp Asp Pro Thr Asp Pro  
130 135 140

Asp Glu Trp Thr Met His Arg Val Thr Ser Trp Phe Lys Phe His Asp  
145 150 155 160

Phe Pro Glu Ser Trp Ile Leu Phe Phe Lys Lys His Gln Leu Phe Gly  
165 170 175

His Arg Phe Ile Lys Leu Leu Ala Tyr Asp Asn Phe Ala Val Tyr Glu  
180 185 190

Lys Tyr Leu Pro Gln Thr Lys Thr Ala Ser Tyr Thr Arg Phe Gln Gln  
195 200 205

Leu Leu Lys Lys Thr Met Thr Lys Asn Val Thr Asn Ser His Ile Arg  
210 215 220

## WALLACH21(INL2).ST25.txt

Gln Lys Ser Ala Ser Lys Leu Lys Ser Ser Arg Ser Ser Ser Glu Ser  
 225 230 235 240  
 Ile Lys Ser Lys Leu Lys Asn Ser Lys Ser Gln Glu Asp Ile Ser Asn  
 245 250 255  
 Ser Arg Ser Thr Ser Glu Ser Ala Leu Ser Pro Thr Lys Ser Gly Pro  
 260 265 270  
 Ser Lys Thr Asp Glu Lys Asn Phe Leu His Ser Thr Ser Thr His Gln  
 275 280 285  
 Lys Thr Lys Ser Ala Ser Ser Leu Tyr Arg Arg Ser Phe Ile Ser Leu  
 290 295 300  
 Arg Gly Ser Ser Ser Ser Asn Ala Ser Ser Ala Lys Ser Pro Ser Asn  
 305 310 315 320  
 Ile Lys Leu Ser Ile Pro Ala Arg Pro His Ser Ile Ile Glu Ser Asn  
 325 330 335  
 Ser Thr Leu Thr Lys Ser Ala Ser Pro Pro Ala Ser Pro Ser Tyr Pro  
 340 345 350  
 Ser Ile Phe Arg Arg His His Lys Ser Ser Ser Ser Glu Ser Ser Leu  
 355 360 365  
 Ile Asn Ser Leu Phe Gly Ser Gly Ile Gly Glu Glu Ala Pro Thr Lys  
 370 375 380  
 Pro Asn Pro Gln Gly His Ser Leu Ser Ser Glu Asn Leu Ala Lys Gly  
 385 390 395 400  
 Lys Ser Lys His Tyr Glu Thr Asn Val Ser Ser Pro Leu Lys Gln Ser  
 405 410 415  
 Ser Leu Pro Thr Ser Asp Asp Lys Gly Asn Leu Trp Asn Lys Phe Lys  
 420 425 430  
 Arg Lys Ser Gln Ile Gly Val Pro Ser Pro Asn Thr Val Ala Tyr Val  
 435 440 445  
 Thr Ser Gln Glu Thr Pro Ser Leu Lys Ser Asn Ser Ser Thr Ala Thr  
 450 455 460  
 Leu Thr Val Gln Thr Ala Asp Val Asn Ile Pro Ser Pro Ser Ser Ser  
 465 470 475 480  
 Pro Pro Pro Ile Pro Lys Thr Ala Asn Arg Ser Leu Glu Val Ile Ser  
 485 490 495

## WALLACH21(INL2).ST25.txt

Thr Glu Asp Thr Pro Lys Ile Ser Ser Thr Thr Ala Ser Phe Lys Glu  
 500 505 510  
 Thr Tyr Pro Asp Cys Ile Asn Pro Asp Lys Thr Val Pro Val Pro Val  
 515 520 525  
 Asn Asn Gln Lys Tyr Ser Val Lys Asn Phe Leu Leu Asp Gln Lys Phe  
 530 535 540  
 Tyr Pro Leu Lys Lys Thr Gly Leu Asn Asp Ser Glu Asn Lys Tyr Ile  
 545 550 555 560  
 Leu Val Thr Lys Asp Asn Val Ser Phe Val Pro Leu Asn Leu Lys Ser  
 565 570 575  
 Val Ala Lys Leu Ser Ser Phe Lys Glu Ser Ala Leu Thr Lys Leu Gly  
 580 585 590  
 Ile Asn His Lys Asn Val Thr Phe His Met Thr Asp Phe Asp Cys Asp  
 595 600 605  
 Ile Gly Ala Ala Ile Pro Asp Asp Thr Leu Glu Phe Leu Lys Lys Ser  
 610 615 620  
 Leu Phe Leu Asn Thr Ser Gly Lys Ile Tyr Ile Lys Asp Gln Met Lys  
 625 630 635 640  
 Leu Gln Gln Lys Pro Lys Pro Ala Pro Leu Thr Ser Glu Asn Asn Val  
 645 650 655  
 Pro Leu Lys Ser Val Lys Ser Lys Ser Ser Met Arg Ser Gly Thr Ser  
 660 665 670  
 Ser Leu Ile Ala Ser Thr Asp Asp Val Ser Ile Val Thr Ser Ser Ser  
 675 680 685  
 Asp Ile Thr Ser Phe Asp Glu His Ala Ser Gly Ser Gly Arg Arg Tyr  
 690 695 700  
 Pro Gln Thr Pro Ser Tyr Tyr Tyr Asp Arg Val Ser Asn Thr Asn Pro  
 705 710 715 720  
 Thr Glu Glu Leu Asn Tyr Trp Asn Ile Lys Glu Val Leu Ser His Glu  
 725 730 735  
 Glu Asn Ala Pro Lys Met Val Phe Lys Thr Ser Pro Lys Leu Glu Leu  
 740 745 750  
 Asn Ile Pro Asp Lys Gly Ser Lys Leu Asn Ile Pro Thr Pro Ile Thr  
 755 760 765



## WALLACH21(INL2).ST25.txt

Glu Asn Glu Ser Lys Ser Ser Phe Gln Val Leu Arg Lys Asp Glu Gly  
 770 775 780

Thr Glu Ile Asp Phe Asn His Arg Arg Glu Ser Pro Tyr Thr Lys Pro  
 785 790 795 800

Glu Leu Ala Pro Lys Arg Glu Ala Pro Lys Pro Pro Ala Asn Thr Ser  
 805 810 815

Pro Gln Arg Thr Leu Ser Thr Ser Lys Gln Asn Lys Pro Ile Arg Leu  
 820 825 830

Val Arg Ala Ser Thr Lys Ile Ser Arg Ser Lys Arg Ser Lys Pro Leu  
 835 840 845

Pro Pro Gln Leu Leu Ser Ser Pro Ile Glu Ala Ser Ser Ser Ser Pro  
 850 855 860

Asp Ser Leu Thr Ser Ser Tyr Thr Pro Ala Ser Thr His Val Leu Ile  
 865 870 875 880

Pro Gln Pro Tyr Lys Gly Ala Asn Asp Val Met Arg Arg Leu Lys Thr  
 885 890 895

Asp Gln Asp Ser Thr Ser Thr Ser Pro Ser Leu Lys Met Lys Gln Lys  
 900 905 910

Val Asn Arg Ser Asn Ser Thr Val Ser Thr Ser Asn Ser Ile Phe Tyr  
 915 920 925

Ser Pro Ser Pro Leu Leu Lys Arg Gly Asn Ser Lys Arg Val Val Ser  
 930 935 940

Ser Thr Ser Ala Ala Asp Ile Phe Glu Glu Asn Asp Ile Thr Phe Ala  
 945 950 955 960

Asp Ala Pro Pro Met Phe Asp Ser Asp Asp Ser Asp Asp Asp Ser Ser  
 965 970 975

Ser Ser Asp Asp Ile Ile Trp Ser Lys Lys Lys Thr Ala Pro Glu Thr  
 980 985 990

Asn Asn Glu Asn Lys Lys Asp Glu Lys Ser Asp Asn Ser Ser Thr His  
 995 1000 1005

Ser Asp Glu Ile Phe Tyr Asp Ser Gln Thr Gln Asp Lys Met Glu  
 1010 1015 1020

Arg Lys Met Thr Phe Arg Pro Ser Pro Glu Val Val Tyr Gln Asn  
 1025 1030 1035

## WALLACH21(INL2).ST25.txt

Leu Glu Lys Phe Phe Pro Arg Ala Asn Leu Asp Lys Pro Ile Thr  
 1040 1045 1050  
 Glu Gly Ile Ala Ser Pro Thr Ser Pro Lys Ser Leu Asp Ser Leu  
 1055 1060 1065  
 Leu Ser Pro Lys Asn Val Ala Ser Ser Arg Thr Glu Pro Ser Thr  
 1070 1075 1080  
 Pro Ser Arg Pro Val Pro Pro Asp Ser Ser Tyr Glu Phe Ile Gln  
 1085 1090 1095  
 Asp Gly Leu Asn Gly Lys Asn Lys Pro Leu Asn Gln Ala Lys Thr  
 1100 1105 1110  
 Pro Lys Arg Thr Lys Thr Ile Arg Thr Ile Ala His Glu Ala Ser  
 1115 1120 1125  
 Leu Ala Arg Lys Asn Ser Val Lys Leu Lys Arg Gln Asn Thr Lys  
 1130 1135 1140  
 Met Trp Gly Thr Arg Met Val Glu Val Thr Glu Asn His Met Val  
 1145 1150 1155  
 Ser Ile Asn Lys Ala Lys Asn Ser Lys Gly Glu Tyr Lys Glu Phe  
 1160 1165 1170  
 Ala Trp Met Lys Gly Glu Met Ile Gly Lys Gly Ser Phe Gly Ala  
 1175 1180 1185  
 Val Tyr Leu Cys Leu Asn Val Thr Thr Gly Glu Met Met Ala Val  
 1190 1195 1200  
 Lys Gln Val Glu Val Pro Lys Tyr Ser Ser Gln Asn Glu Ala Ile  
 1205 1210 1215  
 Leu Ser Thr Val Glu Ala Leu Arg Ser Glu Val Ser Thr Leu Lys  
 1220 1225 1230  
 Asp Leu Asp His Leu Asn Ile Val Gln Tyr Leu Gly Phe Glu Asn  
 1235 1240 1245  
 Lys Asn Asn Ile Tyr Ser Leu Phe Leu Glu Tyr Val Ala Gly Gly  
 1250 1255 1260  
 Ser Val Gly Ser Leu Ile Arg Met Tyr Gly Arg Phe Asp Glu Pro  
 1265 1270 1275  
 Leu Ile Lys His Leu Thr Thr Gln Val Leu Lys Gly Leu Ala Tyr  
 1280 1285 1290

WALLACH21(INL2).ST25.txt

Leu His Ser Lys Gly Ile Leu His Arg Asp Met Lys Ala Asp Asn  
1295 1300 1305

Leu Leu Leu Asp Gln Asp Gly Ile Cys Lys Ile Ser Asp Phe Gly  
1310 1315 1320

Ile Ser Arg Lys Ser Lys Asp Ile Tyr Ser Asn Ser Asp Met Thr  
1325 1330 1335

Met Arg Gly Thr Val Phe Trp Met Ala Pro Glu Met Val Asp Thr  
1340 1345 1350

Lys Gln Gly Tyr Ser Ala Lys Val Asp Ile Trp Ser Leu Gly Cys  
1355 1360 1365

Ile Val Leu Glu Met Phe Ala Gly Lys Arg Pro Trp Ser Asn Leu  
1370 1375 1380

Glu Val Val Ala Ala Met Phe Lys Ile Gly Lys Ser Lys Ser Ala  
1385 1390 1395

Pro Pro Ile Pro Glu Asp Thr Leu Pro Leu Ile Ser Gln Ile Gly  
1400 1405 1410

Arg Asn Phe Leu Asp Ala Cys Phe Glu Ile Asn Pro Glu Lys Arg  
1415 1420 1425

Pro Thr Ala Asn Glu Leu Leu Ser His Pro Phe Ser Glu Val Asn  
1430 1435 1440

Glu Thr Phe Asn Phe Lys Ser Thr Arg Leu Ala Lys Phe Ile Lys  
1445 1450 1455

Ser Asn Asp Lys Leu Asn Ser Ser Lys Leu Arg Ile Thr Ser Gln  
1460 1465 1470

Glu Asn Lys Thr Glu  
1475

<210> 19  
<211> 672  
<212> PRT  
<213> Mus sp.

<400> 19

Met Val Thr Ala Val Pro Ala Val Phe Ser Lys Leu Val Thr Met Leu  
1 5 10 15

Asn Ala Ser Gly Ser Thr His Phe Thr Arg Met Arg Arg Arg Leu Met  
20 25 30

Ala Ile Ala Asp Glu Val Glu Ile Ala Glu Val Ile Gln Leu Gly Val  
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WALLACH21(INL2).ST25.txt

40

45

Glu Asp Thr Val Asp Gly His Gln Asp Ser Leu Gln Ala Val Ala Pro  
50 55 60

Thr Ser Cys Leu Glu Asn Ser Ser Leu Glu His Thr Val His Arg Glu  
65 70 75 80

Lys Thr Gly Lys Gly Leu Ser Ala Thr Arg Leu Ser Ala Ser Ser Glu  
85 90 95

Asp Ile Ser Asp Arg Leu Ala Gly Val Ser Val Gly Leu Pro Ser Ser  
100 105 110

Thr Thr Thr Glu Gln Pro Lys Pro Ala Val Gln Thr Lys Gly Arg Pro  
115 120 125

His Ser Gln Cys Leu Asn Ser Ser Pro Leu Ser His Ala Gln Leu Met  
130 135 140

Phe Pro Ala Pro Ser Ala Pro Cys Ser Ser Ala Pro Ser Val Pro Asp  
145 150 155 160

Ile Ser Lys His Arg Pro Gln Ala Phe Val Pro Cys Lys Ile Pro Ser  
165 170 175

Ala Ser Pro Gln Thr Gln Arg Lys Phe Ser Leu Gln Phe Gln Arg Asn  
180 185 190

Cys Ser Glu His Arg Asp Ser Asp Gln Leu Ser Pro Val Phe Thr Gln  
195 200 205

Ser Arg Pro Pro Pro Ser Ser Asn Ile His Arg Pro Lys Pro Ser Arg  
210 215 220

Pro Val Pro Gly Ser Thr Ser Lys Leu Gly Asp Ala Thr Lys Ser Ser  
225 230 235 240

Met Thr Leu Asp Leu Gly Ser Ala Ser Arg Cys Asp Asp Ser Phe Gly  
245 250 255

Gly Gly Gly Asn Ser Gly Asn Ala Val Ile Pro Ser Asp Glu Thr Val  
260 265 270

Phe Thr Pro Val Glu Asp Lys Cys Arg Leu Asp Val Asn Thr Glu Leu  
275 280 285

Asn Ser Ser Ile Glu Asp Leu Leu Glu Ala Ser Met Pro Ser Ser Asp  
290 295 300

Thr Thr Val Thr Phe Lys Ser Glu Val Ala Val Leu Ser Pro Glu Lys  
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305 310 315 320  
 Ala Glu Asn Asp Asp Thr Tyr Lys Asp Asp Val Asn His Asn Gln Lys  
 325 330 335  
 Cys Lys Glu Lys Met Glu Ala Glu Glu Glu Glu Ala Leu Ala Ile Ala  
 340 345 350  
 Met Ala Met Ser Ala Ser Gln Asp Ala Leu Pro Ile Val Pro Gln Leu  
 355 360 365  
 Gln Val Glu Asn Gly Glu Asp Ile Ile Ile Ile Gln Gln Asp Thr Pro  
 370 375 380  
 Glu Thr Leu Pro Gly His Thr Lys Ala Lys Gln Pro Tyr Arg Glu Asp  
 385 390 395 400  
 Ala Glu Trp Leu Lys Gly Gln Gln Ile Gly Leu Gly Ala Phe Ser Ser  
 405 410 415  
 Cys Tyr Gln Ala Gln Asp Val Gly Thr Gly Thr Leu Met Ala Val Lys  
 420 425 430  
 Gln Val Thr Tyr Val Arg Asn Thr Ser Ser Glu Gln Glu Glu Val Val  
 435 440 445  
 Glu Ala Leu Arg Glu Glu Ile Arg Met Met Gly His Leu Asn His Pro  
 450 455 460  
 Asn Ile Ile Arg Met Leu Gly Ala Thr Cys Glu Lys Ser Asn Tyr Asn  
 465 470 475 480  
 Leu Phe Ile Glu Trp Met Ala Gly Gly Ser Val Ala His Leu Leu Ser  
 485 490 495  
 Lys Tyr Gly Ala Phe Lys Glu Ser Val Val Ile Asn Tyr Thr Glu Gln  
 500 505 510  
 Leu Leu Arg Gly Leu Ser Tyr Leu His Glu Asn Gln Ile Ile His Arg  
 515 520 525  
 Asp Val Lys Gly Ala Asn Leu Leu Ile Asp Ser Thr Gly Gln Arg Leu  
 530 535 540  
 Arg Ile Ala Asp Phe Gly Ala Ala Ala Arg Leu Ala Ser Lys Gly Thr  
 545 550 555 560  
 Gly Ala Gly Glu Phe Gln Gly Gln Leu Leu Gly Thr Ile Ala Phe Met  
 565 570 575  
 Ala Pro Glu Val Leu Arg Gly Gln Gln Tyr Gly Arg Ser Cys Asp Val  
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580

Trp Ser Val Gly Cys Ala Ile Ile Glu Met Ala Cys Ala Lys Pro Pro  
595 600 605

Trp Asn Ala Glu Lys His Ser Asn His Leu Ala Leu Ile Phe Lys Ile  
610 615 620

Ala Ser Ala Thr Thr Ala Pro Ser Ile Pro Ser His Leu Ser Pro Gly  
625 630 635 640

Leu Arg Asp Val Ala Val Arg Cys Leu Glu Leu Gln Pro Gln Asp Arg  
645 650 655

Pro Pro Ser Arg Glu Leu Leu Lys His Pro Val Phe Arg Thr Thr Trp  
660 665 670

<210> 20  
<211> 1314  
<212> PRT  
<213> Homo sapiens

<400> 20

Met Met Met Asp Ile Leu Asn Thr Gln Gln Gln Lys Ala Ala Glu Gly  
1 5 10 15

Gly Arg Val Leu Ala Pro His Thr Ile Ser Ser Lys Leu Val Lys Arg  
20 25 30

Leu Ser Ser His Ser Ser His Lys Leu Ser Arg Ser Asp Leu Lys Ala  
35 40 45

Leu Gly Gly Ser Glu Thr Ile Ser Asp Gly Pro Ser Gln Leu Thr Phe  
50 55 60

Lys Asp Arg Tyr Val Phe Asn Glu Ser Leu Tyr Leu Lys Lys Leu Lys  
65 70 75 80

Lys Thr Ala Leu Asp Asp Tyr Tyr Thr Arg Gly Ile Lys Leu Thr Asn  
85 90 95

Arg Tyr Glu Glu Asp Asp Gly Asp Asp Glu Ile Ile Arg Leu Ser Asn  
100 105 110

Gly Asp Arg Ile Asp Glu Asp Leu His Ser Gly Val Lys Phe Phe Ser  
115 120 125

Thr Thr Pro Tyr Cys Arg Lys Met Arg Ser Asp Ser Asp Glu Leu Ala  
130 135 140

Trp Asn Glu Ile Ala Thr Glu Arg Phe Lys Trp Gln Ser Met Leu Ala  
145 150 155 160

## WALLACH21(INL2).ST25.txt

Arg Val Leu Lys Gly Asp Ile Val Lys Gly Glu Lys Thr Arg Ile Ala  
 165 170 175  
 Asn Gln Val Lys Lys Pro Gly Leu Asn Lys Glu Leu Ser Asp Glu Ile  
 180 185 190  
 Trp Leu Glu Leu Lys Ala Trp Leu Asn Gly Arg Thr Met Gln Glu Met  
 195 200 205  
 Glu Gln Ser Leu Thr Tyr Leu Arg Asp Ser Ser Asp Ser Val Phe Glu  
 210 215 220  
 Glu Ile Met Lys Phe Gln Ile Pro Gln Gly Lys Ile Leu Ser Leu Asp  
 225 230 235 240  
 Ala Leu Glu Ala Ile Leu Gln Asp Leu Met Asn Arg Tyr His Ser Val  
 245 250 255  
 Val Ser Tyr Trp Pro Asn Leu Lys Lys Met Tyr Lys Asp Lys Pro Ile  
 260 265 270  
 Thr Asn Thr Ala Glu Phe Thr Ala Arg Ile Asp Val Met Asn Ser Trp  
 275 280 285  
 Leu Asn Phe Lys Thr Asn Leu Thr Leu Arg Arg Gln Glu Leu Asp Asp  
 290 295 300  
 Trp Ile Asn Arg Phe Ser Pro Ile Ser Ser Ser Asp Asn Cys Gln Glu  
 305 310 315 320  
 Asp Phe Asp Gly Val Pro Gln Trp Asn Cys Lys Met Lys Ile Leu Ala  
 325 330 335  
 Glu Gln Leu Met Lys Glu Lys Asn Ile Glu Ser Ile Phe Gln Lys Lys  
 340 345 350  
 Ile Phe Tyr Pro Leu Ser Pro Trp Met Phe Lys Leu Lys Leu His Phe  
 355 360 365  
 Ile Val Tyr Arg Glu Thr Leu Thr Lys Met Asn Ile Lys Tyr Pro Tyr  
 370 375 380  
 Glu Arg Leu Arg Ser Leu Leu Ala Phe Pro Val Tyr Leu Ile Lys Glu  
 385 390 395 400  
 Val Ile Leu Thr Arg Leu Ser Tyr Ala Arg Lys Leu Lys Asn Pro Thr  
 405 410 415  
 Met Met Met Ile Asp Gln Met Ile Asp Asp Phe Asn Ala Phe Ile Arg  
 420 425 430

## WALLACH21(INL2).ST25.txt

Leu Ser Val Gln Leu Lys Tyr Thr Leu Thr Lys Tyr Cys Ser Asn Leu  
 435 440 445  
 Pro Phe Asp Val Asp Phe Asp Pro Thr Phe Glu Asn Thr Val Ile Glu  
 450 455 460  
 Ala Ile Arg Tyr Leu Phe Phe Leu Leu Asn Leu Lys Leu Ile Asp Ser  
 465 470 475 480  
 Ser Lys Gln Asn Phe Lys Ala Pro Asp Leu Leu Leu Lys Tyr Trp Asp  
 485 490 495  
 His Leu Lys Asn Thr Gly His Tyr Ile Asn Gly Ala Glu Thr Val Ile  
 500 505 510  
 Pro Asn Glu Phe Leu Lys Leu Thr Leu Arg Leu Val His Lys Leu Gln  
 515 520 525  
 Phe Tyr Leu Leu Lys Gln Gln Asn Phe Pro Pro Thr Phe Ala Asn Ala  
 530 535 540  
 Ser Glu Ala Glu Lys Trp Leu Ser Ser Ile Phe Glu Asn Leu Gly Ala  
 545 550 555 560  
 Met Lys Arg Lys Leu Asn Arg Phe Ser Asn Ile Leu Val Lys Ala Phe  
 565 570 575  
 Gln Asn Ser Ala Val Tyr Gln Ile Asn His Asn Ala Gln Leu Val Lys  
 580 585 590  
 Lys Leu Lys Asp Ala His Tyr Phe Leu Val Tyr Ser Gly Asn Thr Phe  
 595 600 605  
 Glu Ser Ser Gly Val Tyr Met Phe Ala Ala Pro Glu Leu Leu Gly Cys  
 610 615 620  
 Asp Asn Asp Thr Ile Leu Arg Ile Leu Arg Asn Lys Ser Ile Gly Cys  
 625 630 635 640  
 Asp Leu Val Pro Lys Leu Asp Ile Gly Asn Asn Leu Asn Val Tyr Asp  
 645 650 655  
 Ile Thr Thr Lys Glu Thr Asp Leu Asn Ile Leu Val Ser Lys Gly Glu  
 660 665 670  
 Asp Ser Lys Gly Ile Pro Tyr Tyr Arg Val Val Ala Asn Ser Ser Ser  
 675 680 685  
 Asp Leu Asp Arg His Ala His Gln Ser Lys Lys Lys Asn Phe Ser Thr  
 690 695 700



WALLACH21(INL2).ST25.txt

Asp Pro Phe Asp Gln His Leu Asp Glu Lys Asn Asn Glu Val Phe Glu  
 705 710 715 720  
 Leu Glu Val Ala Leu Ser Ser Leu Gly Ala Leu Val Val Leu Tyr Pro  
 725 730 735  
 Gly Glu Pro Val Val Trp Asp Gly Pro Val Tyr Lys Leu Pro Gly Asn  
 740 745 750  
 Asn Leu Phe Ala Ser Asn Glu Met Asp Leu Gly Lys Ile Gly Asn Pro  
 755 760 765  
 Asn Thr Leu Ile Leu Leu Asn Gln Gly Ser Asn Tyr Ala Leu Thr Tyr  
 770 775 780  
 Gln Ile Asp Lys Phe Asn Gln Thr Val Gly Asp Ser Val Ser Phe Ile  
 785 790 795 800  
 Glu Lys Arg Cys Ser Leu Asn Ser Ile Glu Ser Ser Leu Gln Lys Ile  
 805 810 815  
 Asn Lys Ala Tyr Tyr Lys Leu Thr Tyr Thr Val Leu Asn Asn Tyr Lys  
 820 825 830  
 Gly Ile Leu Gly Ser Phe Met Lys Gln Cys Pro Gly Asn Glu Leu Leu  
 835 840 845  
 Asn Ser Ile Phe Met Phe Gly Arg Asp Phe Gly Arg Ser Phe Leu Lys  
 850 855 860  
 Tyr Asn Ala Phe Ser Ser Lys Arg Lys Tyr Val Ile Ile Phe Leu Met  
 865 870 875 880  
 Val Lys Leu Gly Met Asn Trp Leu Lys Phe Leu Val Glu Glu Cys Asp  
 885 890 895  
 Pro Thr Asp Gln Arg Thr Phe Arg Trp Cys Val Leu Ala Met Asp Phe  
 900 905 910  
 Ala Met Gln Met Thr Ser Gly Tyr Asn Ile Leu Ala Leu Asn Val Lys  
 915 920 925  
 Gln Phe Gln Glu Leu Lys Glu Arg Val Ser Val Cys Met Ser Leu Leu  
 930 935 940  
 Ile Ser His Phe Asp Val Met Gly Ala Arg Ala Thr Glu Ala Glu Asn  
 945 950 955 960  
 Gly Met Gln Gln Ala Arg Leu Asn Ile Asp Thr Glu Glu Asn Ile Asp  
 965 970 975

## WALLACH21(INL2).ST25.txt

Glu Glu Ala Thr Leu Glu Ile Asn Ser Arg Leu Arg Leu Glu Ala Ile  
 980 985 990  
 Lys Thr Leu Glu Lys Thr Met Lys Arg Asn Pro Arg Gln Met Gly Lys  
 995 1000 1005  
 Val Leu Asp Ala Thr Asp Gln Gly Asn Lys Tyr Leu Leu Ser Leu  
 1010 1015 1020  
 Ala Ser Ser Leu Ser Asn Val Ser Met Arg Trp Gln Lys Arg Ser  
 1025 1030 1035  
 Phe Ile Gly Gly Gly Thr Phe Gly Gln Val Tyr Ser Ala Ile Asn  
 1040 1045 1050  
 Leu Glu Asn Gly Glu Ile Leu Ala Val Lys Glu Ile Lys Ile His  
 1055 1060 1065  
 Asp Thr Thr Thr Met Lys Lys Ile Phe Pro Leu Ile Lys Glu Glu  
 1070 1075 1080  
 Met Thr Val Leu Glu Met Leu Asn His Pro Asn Ile Val Gln Tyr  
 1085 1090 1095  
 Tyr Gly Val Glu Val His Arg Asp Lys Val Asn Ile Phe Met Glu  
 1100 1105 1110  
 Tyr Cys Glu Gly Gly Ser Leu Ala Ser Leu Leu Asp His Gly Arg  
 1115 1120 1125  
 Ile Glu Asp Glu Met Val Thr Gln Val Tyr Thr Phe Glu Leu Leu  
 1130 1135 1140  
 Glu Gly Leu Ala Tyr Leu His Gln Ser Gly Val Val His Arg Asp  
 1145 1150 1155  
 Ile Lys Pro Glu Asn Ile Leu Leu Asp Phe Asn Gly Ile Ile Lys  
 1160 1165 1170  
 Tyr Val Asp Phe Gly Thr Ala Arg Thr Val Val Gly Ser Arg Thr  
 1175 1180 1185  
 Arg Thr Val Arg Asn Ala Ala Val Gln Asp Phe Gly Val Glu Thr  
 1190 1195 1200  
 Lys Ser Leu Asn Glu Met Met Gly Thr Pro Met Tyr Met Ala Pro  
 1205 1210 1215  
 Glu Thr Ile Ser Gly Ser Ala Val Lys Gly Lys Leu Gly Ala Asp  
 1220 1225 1230

WALLACH21(INL2).ST25.txt

Asp Val Trp Ala Leu Gly Cys Val Val Leu Glu Met Ala Thr Gly  
1235 1240 1245

Arg Arg Pro Trp Ser Asn Leu Asp Asn Glu Trp Ala Ile Met Tyr  
1250 1255 1260

His Val Ala Ala Gly Arg Ile Pro Gln Leu Pro Asn Arg Asp Glu  
1265 1270 1275

Met Thr Ala Ala Gly Arg Ala Leu Leu Gly Lys Val Phe Gly Ser  
1280 1285 1290

Arg Pro His Tyr Glu Gly Tyr Cys Cys Gly Thr Thr Asp Arg Pro  
1295 1300 1305

Leu Asp Asp Thr Asn Pro  
1310

<210> 21  
<211> 4  
<212> PRT  
<213> Artificial

<220>  
<223> synthetic

<220>  
<221> misc\_feature  
<222> (1)..(1)  
<223> Residue at postion 1 is modified by a N-terminal acetyl group.

<220>  
<221> misc\_feature  
<222> (4)..(4)  
<223> Residue at postion 4 is modified by a C-terminal  
4-methyl-coumaryl-7-amide group.

<400> 21

Asp Glu Val Asp  
1

<210> 22  
<211> 4  
<212> PRT  
<213> Artificial

<220>  
<223> synthetic

<220>  
<221> misc\_feature  
<222> (1)..(1)  
<223> Residue at postion 1 is modified by a N-terminal acetyl group.

<220>  
<221> misc\_feature

## WALLACH21(INL2).ST25.txt

&lt;222&gt; (4)..(4)

<223> Residue at postion 1 is modified by a C-terminal  
chloromethylketone group.

&lt;400&gt; 22

Tyr Val Ala Asp  
1

&lt;210&gt; 23

&lt;211&gt; 501

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 23

Met Ala Ala Ala Ser Val Thr Pro Pro Gly Ser Leu Glu Leu Leu Gln  
1 5 10 15Pro Gly Phe Ser Lys Thr Leu Leu Gly Thr Lys Leu Glu Ala Lys Tyr  
20 25 30Leu Cys Ser Ala Cys Arg Asn Val Leu Arg Arg Pro Phe Gln Ala Gln  
35 40 45Cys Gly His Arg Tyr Cys Ser Phe Cys Leu Ala Ser Ile Leu Ser Ser  
50 55 60Gly Pro Gln Asn Cys Ala Ala Cys Val His Glu Gly Ile Tyr Glu Glu  
65 70 75 80Gly Ile Ser Ile Leu Glu Ser Ser Ser Ala Phe Pro Asp Asn Ala Ala  
85 90 95Arg Arg Glu Val Glu Ser Leu Pro Ala Val Cys Pro Ser Asp Gly Cys  
100 105 110Thr Trp Lys Gly Thr Leu Lys Glu Tyr Glu Ser Cys His Glu Gly Arg  
115 120 125Cys Pro Leu Met Leu Thr Glu Cys Pro Ala Cys Lys Gly Leu Val Arg  
130 135 140Leu Gly Glu Lys Glu Arg His Leu Glu His Glu Cys Pro Glu Arg Ser  
145 150 155 160Leu Ser Cys Arg His Cys Arg Ala Pro Cys Cys Gly Ala Asp Val Lys  
165 170 175Ala His His Glu Val Cys Pro Lys Phe Pro Leu Thr Cys Asp Gly Cys  
180 185 190Gly Lys Lys Lys Ile Pro Arg Glu Lys Phe Gln Asp His Val Lys Thr  
195 200 205

## WALLACH21(INL2).ST25.txt

Cys Gly Lys Cys Arg Val Pro Cys Arg Phe His Ala Ile Gly Cys Leu  
 210 215 220  
 Glu Thr Val Glu Gly Glu Lys Gln Gln Glu His Glu Val Gln Trp Leu  
 225 230 235 240  
 Arg Glu His Leu Ala Met Leu Leu Ser Ser Val Leu Glu Ala Lys Pro  
 245 250 255  
 Leu Leu Gly Asp Gln Ser His Ala Gly Ser Glu Leu Leu Gln Arg Cys  
 260 265 270  
 Glu Ser Leu Glu Lys Lys Thr Ala Thr Phe Glu Asn Ile Val Cys Val  
 275 280 285  
 Leu Asn Arg Glu Val Glu Arg Val Ala Met Thr Ala Glu Ala Cys Ser  
 290 295 300  
 Arg Gln His Arg Leu Asp Gln Asp Lys Ile Glu Ala Leu Ser Ser Lys  
 305 310 315 320  
 Val Gln Gln Leu Glu Arg Ser Ile Gly Leu Lys Asp Leu Ala Met Ala  
 325 330 335  
 Asp Leu Glu Gln Lys Val Leu Glu Met Glu Ala Ser Thr Tyr Asp Gly  
 340 345 350  
 Val Phe Ile Trp Lys Ile Ser Asp Phe Ala Arg Lys Arg Gln Glu Ala  
 355 360 365  
 Val Ala Gly Arg Ile Pro Ala Ile Phe Ser Pro Ala Phe Tyr Thr Ser  
 370 375 380  
 Arg Tyr Gly Tyr Lys Met Cys Leu Arg Ile Tyr Leu Asn Gly Asp Gly  
 385 390 395 400  
 Thr Gly Arg Gly Thr His Leu Ser Leu Phe Phe Val Val Met Lys Gly  
 405 410 415  
 Pro Asn Asp Ala Leu Leu Arg Trp Pro Phe Asn Gln Lys Val Thr Leu  
 420 425 430  
 Met Leu Leu Asp Gln Asn Asn Arg Glu His Val Ile Asp Ala Phe Arg  
 435 440 445  
 Pro Asp Val Thr Ser Ser Ser Phe Gln Arg Pro Val Asn Asp Met Asn  
 450 455 460  
 Ile Ala Ser Gly Cys Pro Leu Phe Cys Pro Val Ser Lys Met Glu Ala  
 465 470 475 480

WALLACH21(INL2).ST25.txt

Lys Asn Ser Tyr Val Arg Asp Asp Ala Ile Phe Ile Lys Ala Ile Val  
485 490 495

Asp Leu Thr Gly Leu  
500